

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
26 September 2002 (26.09.2002)

PCT

(10) International Publication Number  
WO 02/074217 A1

(51) International Patent Classification: A61G 1/00, 17/00, B65D 30/00, 33/00

(21) International Application Number: PCT/AU02/00291

(22) International Filing Date: 15 March 2002 (15.03.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
PR 3734 15 March 2001 (15.03.2001) AU

(71) Applicants and

(72) Inventors: ADAMO, Rosario [AU/AU]; Unit 6, 10 Oriole Street, Perigian, Queensland 4576 (AU). PETRASCU, Michael, Edmond [AU/AU]; 4/79 Noosa Parade, Noosa Heads, Queensland 4567 (AU).

(74) Agent: INTELLPRO; Patent & Trade Mark Attorneys, Level 7, 102 Adelaide Street, (GPO Box 1339, Brisbane, QLD 4001), Brisbane, Queensland 4000 (AU).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.

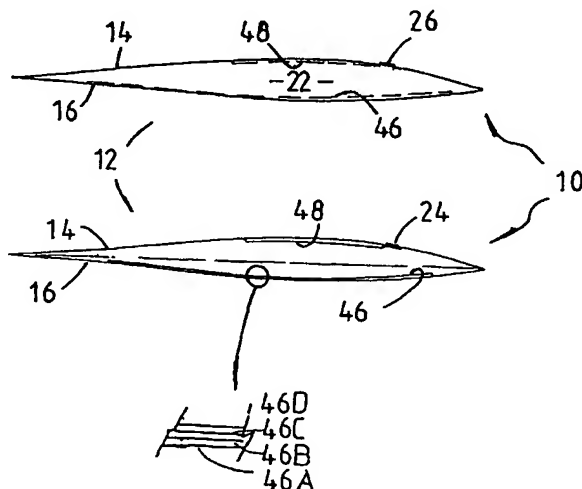
(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: A BAG DEVICE



(57) Abstract: Provided is a bag device (10) for storing a body. The device (10) includes substantially elongate upper and lower impervious flexible panel members (14,16) each having opposed side edges and opposed ends (18,20). Respectively side edges of the members (14,16) are formed integrally therealong, and the members (14,16) are movable to form a cavity (22) for storing the body. The end (18) is closed and the end (20) is normally open so that a body can be inserted into the cavity (22). The members (14,16) are laminates of thermoplastic sheets (46A-46D) and the open end (20) can be sealed by application of heat to the thermoplastic sheets (46A-46D) at the open end (20). Thus, the cavity (22) with the body therein can be hermetically sealed. Pressure release valves (24, 26) are fixed to the member (14) so that any excess pressure in the cavity (22) due to body decomposition is released to the atmosphere. A blanket (50) having layered satchels (52) of fluid absorbent materials is positioned in the cavity (22) to absorb fluid produced during body decomposition.

WO 02/074217 A1

## A BAG DEVICE

THIS INVENTION relates to a bag device for storing a body.

### BACKGROUND OF THE INVENTION

5 Bodies and body remains of dead human beings and animals tend to decompose in a relatively short time. When left uncovered, the bodies and body remains that carry diseases or viruses will spread through either a direct contact therewith, or an indirect transfer by insects or other human beings or animals which have become infected with the diseases or viruses. Some of the diseases or viruses can also be carried and therefore spread by air or water.

10 Decomposition of the bodies and body remains takes place well before burial or cremation. The decomposition process produces liquid and gaseous products which have unpleasant odours. Any escape of the liquid decomposition products can cause serious health problem to the general community.

15 For bodies and body remains that are to be subject to analysis, any loss or contamination may seriously affect results of the analysis. This is undesirable, especially in an autopsy when the cause or causes of death need to be correctly determined. The loss or contaminations in bodies or body remains may also cause infectious diseases to spread.

### OBJECT OF THE INVENTION

20 It is an object of this invention to provide a bag device which alleviates or reduces to a certain level one or more of the above problems.

It is a further object of the present invention to provide a body containment system which alleviates or reduces to a certain level one or more of the above problems.

### 25 SUMMARY OF THE INVENTION

As used hereinafter, the word "body" is taken to mean a body or body remain of a dead person or animal.

30 In one broad aspect therefore the present invention resides in a bag device for storing a body. The bag device includes a substantially elongate upper impervious flexible panel member and a substantially elongate lower impervious flexible panel member, and the upper and lower panel members each having

opposed side edges and opposed ends. Respectively side edges of the upper and lower panel members are sealingly joined together or formed integrally therealong, and the upper and lower panel members are movable to form a cavity for storing the body. At least one of the opposed ends is open so that through it the body can be inserted into the cavity for storage. Sealing means is arranged for sealing closing said at least one open end following insertion of the body, whereby the cavity is hermetically sealed.

The device may further include at least one pressure release means arranged for releasing pressure in the cavity when the pressure due to decomposition of the body in the cavity exceeds a predetermined level. It is preferred that the pressure release means includes at least two pressure release valves so that when one of them is malfunction or clogged the other pressure release valve would continue to release pressure should the pressure within cavity exceeds the predetermined level.

Each of said upper and lower panel members may have one or more layers of a polymer material or materials. It is preferred to have two or more layers so that the bag device will remain hermetically sealed even if there is a break in any one of the layers. Preferably, said upper and lower panel members are each lined with at least one layer of opaque material so that the body in the cavity is not visible externally. The at least one opaque layer may include a metallic foil such as an aluminium foil and/or paper such as "kraft" paper.

Advantageously, said layers of each of the upper and lower panel members are formed as a laminate sheet in order to improve physical strength of the panel members.

The polymer material or materials may include any plastic material such as polyolefin, nylon or polyvinyl. Typical examples of the polyolefin are polyethylene and polypropylene.

Each said upper and lower panel members may have an inner surface bordering said cavity and the sealing means may be in the form of a heat or pressure sealable material arranged at the inner surface of at least one of the panel members in a position at or adjacent to said at least one open end so that the bag

device can be sealed by bringing together sections of the panel members at the at least one open end and applying heat or pressure thereat.

In one form the pressure sealable material is a strip of silicon. The heat sealable material can be a strip of heat weldable material such as thermoplastic.

5 More preferably, at least the panel member(s) or the layer of the panel member(s) having said inner surface, is formed of a heat weldable material so that a simple application of heat within a predetermined range of temperature will form a weld joint between the panel members and thereby sealing the cavity.

10 Preferably the at least one opening is arranged at one end of the device. The other end of the device may be open or closed. If it is normally open then the sealing means as hereinbefore described is also provided for sealing said other end.

Desirably said at least one pressure release means is a one way valve(s) so that only gaseous products within the cavity can flow through the valve(s).

15 One or more gas evacuation means can be provided for evacuating gases in the bag device following sealing of the at least one opening. Alternatively the at least one pressure release means can be arranged to evacuate gases and to release pressure when pressure inside the cavity exceeds said predetermined level.

20 Evacuation of gases in the bag slows down the decomposition process. Accordingly the time for decomposition gas products to build up to the pressure level at which the one or more pressure release means will react to release pressure is much longer. The evacuation also lowers the oxygen level in the bag. The lowered oxygen level helps to reduce the risk of spontaneous combustion that can result from a high ratio of oxygen and combustible decomposition gases.

25 It is preferred that the bag device includes a fluid absorbent composition arranged in the cavity for absorbing decomposition products from said body. Typically said absorbent composition is contained in one or more packages arranged on one or both said inner surfaces. Preferably, the packages for the or each inner surface are satchels joint together to form a mat which is fixed to the inner surface.

30 It is further preferred that the fluid absorbent composition includes one or more gaseous absorbent materials arranged for absorbing decomposition gaseous

products and one or more liquid absorbent materials arranged for absorbing decomposition liquid products from said body.

The mat for the absorbent materials for respective liquid and gaseous products may have at least one porous surface.

- 5           In preference, the one or more liquid or gaseous absorbent materials have an odour masking property so that the odour of any gaseous product released from the pressure means is substantially masked and thereby minimising any unpleasant odour.

- 10           The mat may have a bottom lining of a liquid impermeable material and a top lining of a liquid permeable material, and the fluid absorbent materials being positioned between the top lining and the bottom lining and forming an intermediate lining. Preferably, the bottom lining has an impermeable polyethylene film. More preferably, the bottom lining has a viscose or cotton substrate and an impermeable polyethylene film is secured to one or each surface thereof. The top  
15           lining may be in the form of a non-woven mixture of cotton and viscose or polypropylene fibre.

- Suitable materials for the intermediate lining may include any one or a combination of two or more of natural fibres, wood shavings, coke, lignite, activated carbon, fluid-absorbing granules, gelatine, sodium salts of polyacrylate,  
20           odour-absorbing granules, natural zeolite, and artificial zeolite. The natural zeolite also has odour masking properties.

- It is further preferred that the bag device includes preservative materials in the cavity. The preservative materials can be incorporated into the absorbent materials so that any fluid absorbed into the absorbent materials can be preserved  
25           for a relatively longer time. Calcium chloride is a preferred form of the preservative materials.

- Absorption of the liquid and gaseous decomposition products as they are formed also helps to reduce pressure in the bag. In the case of hydrogen sulfide produced during decomposition the absorption process helps to disproportionate  
30           it to other compounds that have no odour in the liquid phase.

The component materials substantially absorb the liquid and gaseous decomposition products, and minimise foul odours.

The absorbent materials also help to lower microbial activity of bacteria and fungi usually associated with decomposition. This is apparently influenced by the reduction in available water and/or water vapour which are important conditions for bacterial and fungal growth. Bacterial and fungal activities are also inhibited in the presence of terpene compounds on the active surfaces of the absorbents and in the air space about them.

The materials in the intermediate lining are preferably selected so that the mat has an absorbency of at least 40 litres of body fluid per square metre.

Where an impervious backing sheet is required any material capable of being easily adhered or heat sealed to the pervious material may be utilised. An example of such material is a PVC sheet.

In a preferred form the fluid absorbent materials and the preservative materials in the intermediate lining are contained in satchels arranged in layers. The intermediate layer of the mat adjacent to the lower panel member may have a first layer of satchels containing perlite powder, a second layer of satchels containing PVA polyacrylate, a third layer of satchels containing zeolite powder and a fourth layer of satchels containing terpene emulsion.

The intermediate layer of the mat adjacent to the top panel member may have a first layer of satchels containing calcium chloride, a second layer of satchels containing PVA polyacrylate, a third layer of satchels containing vermiculite powder and a fourth layer of satchels containing terpene emulsion.

Preferably, the intermediate layer of the mat adjacent to the top panel member also has filter means for filtering gaseous products before releasing to the atmosphere through the pressure release means. The filter means may have a first layer of satchels containing activated carbon, a second layer of satchels containing vermiculite powder, a third layer of satchels containing terpene emulsion and a fourth layer of satchels containing zeolite emulsion.

The bag device of the present invention can also be used within a coffin. Accordingly there is no need to modify or purchase specially designed coffins in

attempting to overcome the prior art problems. Mausoleums and other funeral houses can therefore use the cadaver bag invention as a very cost effective way to solve the prior art problems.

In another aspect thereof the present invention relates to a body containment system including a plurality of body bags formed as a linear array, the array being arranged so that the bags are folded into a stack or rolled in a roll, and the bags being separable along joints between adjacent bags, each of said bags being a bag device substantially as hereinbefore described, and heating means have spaced heating elements having a length which is equal to or greater than the width between the opposed side edges of the bag device. At least one of the heating elements is movable towards the other heating element. In use, a bag device is separated from the stack or roll, and placed with said at least one open end thereof between the heating elements and the sealing means in alignment therewith. The movable heating element is then moved towards the other heating element so that the bag device is in contact with the heating elements and the sealing means is being heated by the heating elements. The heat causes the sealing means to form a weld joint and thereby sealing the cavity. The movable heating element then can be moved for so that the bag can be released from the heating means.

The heating means may have a base and spaced posts extending from the base. The heating elements are arranged on the posts with the movable element above the other element. Preferably, a handle is fixed to the movable element so that movable element can be moved as the handle is moved along the posts.

#### BRIEF DESCRIPTION OF THE INVENTION

In order that the present invention can be more readily understood and be put into practical effect reference will now be made to the accompanying drawings which illustrate one preferred embodiment of the invention and wherein:

Figure 1 is a plan schematic view of a bag device according to one embodiment of the present invention;

Figure 2 is a side schematic view of the bag device shown in Figure 1;

Figure 3 is a longitudinal section view of the bag device shown in Figure 2;

Figure 4 is a cross section view of the bag device shown in Figure 2;

Figure 5 is a plan view of the pressure release valve for the bag device shown in Figures 1 to 4;

Figure 6 is a sectional view through the valve shown in Figure 5;

Figure 7 is a plan view of the cover for the valve shown in Figures 5 and 6;

5 Figure 8 is plan view of the valve body of the valve shown in Figures 5 and 6;

Figure 9 is a plan view of the diaphragm for the valve shown in Figures 5 and 6;

10 Figure 10 is a cut away plan view of another embodiment of the bag device according to the present;

Figure 11 is a cross section view of the device shown in Figure 10;

Figure 12 shows a form of the mat used in the device shown in Figure 10;

Figure 13 is an expanded view of the laminate upper member of the device shown in Figure 10; and

15 Figure 14 shows an embodiment of the body containment system according to the present invention.

#### DETAILED DESCRIPTION OF THE INVENTION

Referring to the drawings and initially to Figures 1 to 4 there is shown a bag device 10 comprising a bag element 12 for storing a body and the device 10 is to be used for hermetically sealing the body before an autopsy or for use in a mausoleum before burial or cremation.

The bag element 12 has a top panel member 14, a bottom panel member 16 arranged opposite to the top panel member 14, and ends 18 and 20. The panel members 14 and 16 are laminate sheets of a plastics material such as a polyethylene and nylon laminated film, which is heat sealable. In this embodiment the sides of the panels members 14 and 16 are integrally formed and the end 18 is heat sealed to form a closed end. The end 20 is open so that in use a body (not shown) can be inserted into a cavity or chamber 22 between the top and bottom panel members 14 and 16. The open end 20 is heat sealed following insertion of the body and the bag device 10 is then hermetically sealed.



The top panel member 14 has two pressure sensitive one way gas release valves 24 and 26 which are set to release gases built up within the chamber 22 when the pressure within the chamber 22 is over a predetermined level which can be atmospheric pressure.

5        Either of the valves 24 and 26 can be connected to a vacuum pump (not shown) to evacuate air and other gases in the chamber 22 following sealing of the end 20. The chamber 22 then forms a partial vacuum.

Turning to Figures 5 to 9 which show certain details of the valve 24. The valve 24 is fixed within an aperture in the top panel member 14. The valve 24 has  
10       a flange member 28 extending from a cylindrical central member 30. Extending upwardly from the flange 28 is a ring 32 for accommodating a silicon rubber diaphragm 34. The diaphragm 34 is seated on the rim of the central member 30.

As can be seen in Figures 8 and 9 the diaphragm 34 has a fixing hole 36 for a stud 40 of a valve cover member 38 to extend therethrough to fix the diaphragm  
15       34 in position. The cover member 38 has a number of venting venturis 42 for air and other gases from the chamber 22 to pass when pressure within the chamber 22 forces the diaphragm 34 to open the valve 24.

The central member 30 has a number of ribs 44 radiating from the centre of the member 30. The ribs 44 improve structural strength of the central member 30.

20       Figure 6 shows that the flange member 28 extends to underlie parts the top panel member 14 that surround the aperture. the underlying parts are heat sealed to the flange 28 in order to fix the valve 24 in position.

The valve 26 is similar to the valve 24. As its details are obvious to any skilled addressee they are not repeated here.

25       Within the chamber 22 the bottom panel member 16 has a layer of mat or blanket like material 46 which has an impervious sheet of PVC 46A against the inside surface of the bottom panel member 16 and a lining. Between the lining and the sheet 46A are 3 layers of sachets 46B, 46C and 46D containing the absorbents described in more detail below.

30       On the inside surface of the top panel member 14 are adhered another layer of mat or blanket like material 48 having a layer of sachets covered by a satin lining.

The table below shows the constituents of the sachets in the layers 46B, 46C, and 46D:

	Layer from top to bottom	Compounds	Number of sachets per layer	% by weight
5				
		<u>Intermediate Layer</u>		
	1	Activated Carbon	10	28.57
	2	Vermiculite/Powder	10	28.57
	3	Terpene Emulsion	10	28.57
10	4	Zeolite Emulsion	5	14.28
			35	
		<u>Top Layer</u>		
	1	Calcium Chloride	24	20.69
15	2	PVA Polyacrylate	45	38.79
	3	Vermiculite/ Powder	35	30.172
	4	Terpene Emulsion	12	10.345
			116	
20		<u>Bottom Layer</u>		
	1	Perlite/Powder	45	23.68
	2	PVA Polyacrylate	55	28.94
	3	Zeolite/Powder	65	43.21
	4	Terpene Emulsion	25	13.15
25			190	

The PVA polyacrylate is a non hazardous stable copolymer. It is insoluble in water but is capable of absorbing up to 400 times its mass in water.

The Perlite used is a natural mineral which is stable from -25°C to 100°C. The density is within the range 45-75kg/m<sup>3</sup>. It has a high surface area and high porosity. Its capillary lift is about 13mm/min @ 5 minutes and its water and oil absorption capacity is about 60% by volume.

The zeolite used has a SiO<sub>2</sub> : Al<sub>2</sub> O<sub>3</sub> ratio of about 5.7, a surface area of about 28-39m<sup>2</sup>/g and an ammonia gas absorbency of about 250-300meg/100g. Its functionality is to absorb gases such as methane, ammonia, hydrogen sulfide and

compounds such as amines and ammonia salts and cations such as sodium, calcium, magnesium, iron, zinc, copper.

The terpene emulsion used is effective as a bactericide.

5 The presence of the absorbents retards the pace of decomposition within the bag device 10, binds the liquid decomposition products and also binds a majority of the gaseous decomposition products. The initial evacuation reduces the available oxygen and the binding of possible reactive gases, and ensures that this can be avoided.

10 Referring now to Figure 10 which illustrates another bag device 10 according to the present invention. This bag device 10 is substantially similar to the Figure 1 embodiment. According the same reference symbols are used to indicate the same or similar integers.

15 The device 10 in Figure 10 has laminated top and bottom panel members 14 and 16, and ends 18 and 20 which are heat sealable. Figure 13 shows that the laminated top panel member 14 has an outer layer 14a of a nylon material and a bottom layer 14e of a heat sealable polyethylene material. In between the top layer 14a and the bottom layer 14e are arranged a layer 14b of a polyvinyl material, a layer 14c of an aluminium film and a layer 14d of a polyvinyl material.

20 Turning to Figure 11, in the chamber 22 of the device 10 is arranged a blanket 50 folded as shown and adhered to the bottom layers 14e of the respective top and bottom panel members 14 and 16. Fixed to the blanket 50 are mats 46 and 48 of satchels 52 containing the fluid absorbent materials. Figure 12 shows that the satchels 52 are stitched together along horizontal lines 54 and vertical lines 56 to form the mat 46. The mat 48 is formed in the like manner.

25 Figure 14 shows a bag containment system 60 having a supply 62 of bag devices 10 in a roll. While not shown it can be appreciated that for ease of separation of the bag devices 10, the roll would have weakened joints such as perforations between adjacent bag devices 10. As can be seen each of the bag devices 10 have an open end 20 which is revealed following separation from the preceding bag device 10. The opposite end 18 is closed. Accordingly, only the open  
30 end 20 needs to be sealed following insertion of a body in the chamber 22.

The roll of supply 62 can be supported on a horizontal bar on a stand so that the roll can rotate freely when the open end 20 is pulled.

Also shown in Figure 14 is a bench heating apparatus 64 for sealing the free end 20 of the bag device 10. The apparatus 64 has a base 66, a heater element 68  
5 fixedly positioned on the base 66 and a movable heater element 70 movably supported on a pair of posts 72. A handle 74 is attached to the heater element 70 for moving it along the posts 72.

In application, a bag device 10 is separated from the roll of supply 62 and a body is inserted in the separated bag device 10. The open end 20 of the separated  
10 bag device 10 is then placed on the fixed heater element 68 and the movable heater element lowered along the posts 72 to contact the open end 20. The sealing material which may be silicon or the polyethylene layers 14e, would fuse and form a sealed weld joint when sufficient heat from the elements 68 and 70 is applied.

While the electric control and connection elements of the apparatus 64 are  
15 not illustrated it is believed that any skilled person would appreciate that the elements 68 and 70 can be connected to a power source through a power regulator for controlling power and thereby controlling temperature available from the elements 68 and 70. The regulator may be of an adaptive type so that the power source may be a DC supply such as from a battery of a vehicle or from a power  
20 outlet of the power authority.

While the bag device 10 described in above embodiment is for a single body it should be noted the bag device 10 of present invention can be adapted for storage more than one body.

From the above description it can be seen that the present invention  
25 overcomes the certain problems in relation to loss and contamination of body samples, and minimises the spread of diseases and viruses from the body.

Whilst the above has been given by way of illustrative example of the present invention many variations and modifications thereto will be apparent to those skilled in the art without departing from the broad ambit and scope of the  
30 invention as herein set forth.

CLAIMS

1. A bag device for storing a body, including a substantially elongate upper impervious flexible panel and a substantially elongate lower impervious flexible panel member, and the upper and lower panel members each having opposed side edges and opposed ends, respectively side edges of the upper and lower panel members being sealingly joined together or formed integrally therealong, and the upper and lower panel members each having inner surface and being movable to form a cavity for storing the body, at least one of the opposed ends is open so that through the open end(s) the body can be inserted into the cavity for storage, and sealing means arranged for sealing closing said at least one open end following insertion of the body, whereby the cavity is hermetically sealed.
2. The device according to claim 1 further including pressure release means arranged for releasing pressure in the cavity when the pressure due to decomposition of the body in the cavity exceeds a predetermined level.
3. The device according to claim 3 wherein the pressure release means includes at least two pressure release valves arranged so that when one of them is malfunction or clogged the other pressure release valve would continue to release pressure should the pressure within cavity exceeds the predetermined level.
4. The device according to any one of claims 1 to 3 wherein each of said upper and lower panel members being formed of one or more layers of a polymeric material or materials.
5. The device according to claim 4 wherein each of said upper and lower panel members having two or more layers of the polymeric material or materials so that the device remains hermetically sealed even if there is a break in any one of the layers.
6. The device according to claim 4 or 5 wherein the polymeric material or materials are transparent or translucent and the layer or layers of said upper and lower panel members are each lined with at least one layer of opaque material so that the body in the cavity is not visible externally.
7. The device according to claim 6 wherein the at least one opaque layer includes a metallic foil and/or paper.

8. The device according to any one of claims 4 to 7 wherein said layers of each of the upper and lower panel members are formed as a laminate sheet in order to improve physical strength of the panel members.
9. The device according to any one of claims 4 to 8 wherein the polymeric material or materials include polyolefin, nylon or polyvinyl.
10. The device according to any one of claims 1 to 9 wherein each said upper and lower panel members having an inner surface bordering said cavity and the sealing means is in the form of a heat or pressure sealable material arranged at the inner surface of at least one of the panel members in a position at or adjacent to said at least one open end so that the bag device can be sealed by bringing together sections of the panel members at the at least one open end and applying heat or pressure thereat.
11. The device according to claim 10 wherein the pressure sealable material is a strip of silicon.
12. The device according to claim 10 wherein the heat sealable material is a strip of heat weldable material.
13. The device according to any one of claims 1 to 9 wherein at least the panel member(s) or the layer of the panel member(s) having said inner surface, is formed of a heat weldable material so that an application of heat within a predetermined range of temperature forms a weld joint between the panel members and thereby sealing the cavity.
14. The device according to any one of claims 1 to 13 wherein the at least one opening is arranged at one end of the device, and the other end of the device being open or closed, and where said other end is normally open further sealing means is arranged for sealing said other end.
15. The device according to any one of claims 1 to 14 wherein the pressure release means is adapted for evacuating gases within the cavity and thereafter to release pressure when pressure due to gases in the cavity exceeds said predetermined level.

16. The device according to any one of claims 1 to 15 further including a fluid absorbent composition arranged in the cavity for absorbing decomposition products from said body.
17. The device according to claim 16 wherein the fluid absorbent composition includes one or more gaseous absorbent materials arranged for absorbing decomposition gaseous products and one or more liquid absorbent materials arranged for absorbing decomposition liquid products from said body.
18. The device according to claim 17 wherein at least one of the one or more absorbent materials having an odour masking property so that the odour of any gaseous product released from the pressure means is substantially masked and thereby minimising any unpleasant odour.
19. The device according to claim 16 or 18 wherein said absorbent composition is contained in one or more packages arranged on one or both said inner surfaces.
20. The device according to claim 19 wherein the packages for the or each inner surface are satchels joint together and incorporated into a mat arranged adjacent to the inner surface(s).
21. The device according to claim 20 wherein the mat having a bottom lining of a liquid impermeable material and a top lining of a liquid permeable material, and the fluid absorbent composition being positioned between the top lining and the bottom lining and forming an intermediate lining.
22. The device according to claim 21 wherein the bottom lining has an impermeable polyethylene film, or a viscose or cotton substrate and an impermeable polyethylene film.
23. The device according to claim 21 or 22 wherein the top lining being in the form of a non-woven mixture of cotton and viscose or polypropylene fibre.
24. The device according to any one of claims 21 to 23 wherein the absorbent composition for the intermediate lining includes any one or a combination of two or more of natural fibres, wood shavings, coke, lignite, activated carbon, fluid-absorbing granules, gelatine, sodium salts of polyacrylate, odour-absorbing granules, natural zeolite, and artificial zeolite.

25. The device according to any one of claims 1 to 24 wherein preservative materials are incorporated into the absorbent composition so that any fluid absorbed therein is preserved for a relatively longer time.
26. The device according to any one of claims 21 to 25 wherein fluid absorbent composition in the intermediate lining are contained in satchels arranged in layers.
27. The device according to claim 26 wherein the intermediate layer of the mat adjacent to the lower panel member having a first layer of satchels containing perlite powder, a second layer of satchels containing PVA polyacrylate, a third layer of satchels containing zeolite powder and a fourth layer of satchels containing terpene emulsion.
28. The device according to claim 26 or 27 wherein the intermediate layer of the mat adjacent to the top panel member having a first layer of satchels containing calcium chloride, a second layer of satchels containing PVA polyacrylate, a third layer of satchels containing vermiculite powder and a fourth layer of satchels containing terpene emulsion.
29. The device according to claim 28 wherein the intermediate layer of the mat adjacent to the top panel member also has filter means for filtering gaseous products before releasing to the atmosphere through the pressure release means.
30. The device according to claim 29 wherein the filter means having a first layer of satchels containing activated carbon, a second layer of satchels containing vermiculite powder, a third layer of satchels containing terpene emulsion and a fourth layer of satchels containing zeolite emulsion.
31. A body containment system including a plurality of body bags formed as a linear array, the array being arranged so that the bags are folded into a stack or rolled in a roll, and the bags being separable along joints between adjacent bags, each of said bags being a bag device substantially as claimed in any one of claims 1 to 30, and heating means having spaced heating elements of a length which is equal to or greater than the width between the opposed side edges of the bag device and at least one of the heating elements is movable towards the other heating element, in use, a bag device is separated from the stack or roll, and placed with said at least one open end thereof between the heating elements and the



sealing means in alignment therewith, the movable heating element is then moved towards the other heating element so that the bag device is in contact with the heating elements and the sealing means is being heated by the heating elements to a temperature that causes the sealing means to form a weld joint and thereby sealing the cavity.

32. The device according to claim 31 wherein the heating means having a base and spaced posts extending from the base, and the heating elements being arranged on the posts with the movable element above the other element, and a handle is fixed to the movable element so that movable element can be moved as the handle is moved along the posts.

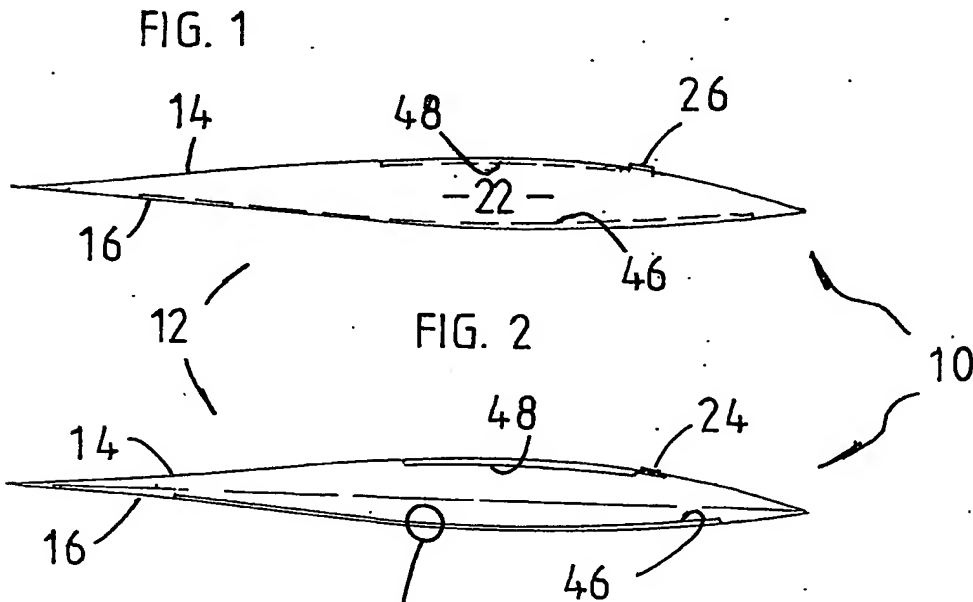
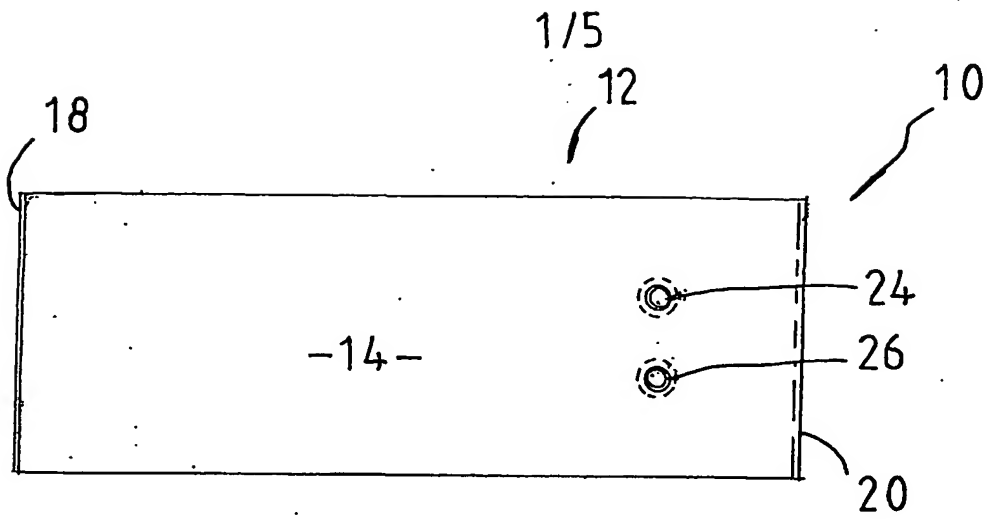


FIG. 3

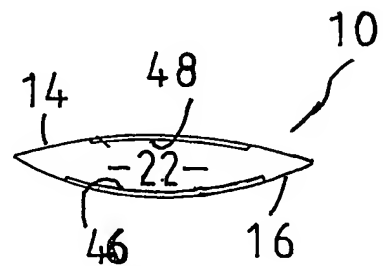
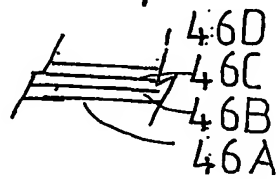


FIG. 4

2/5

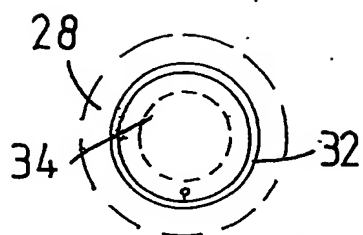


FIG. 5

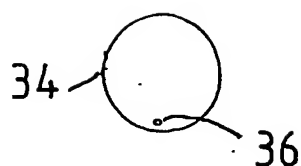


FIG. 9

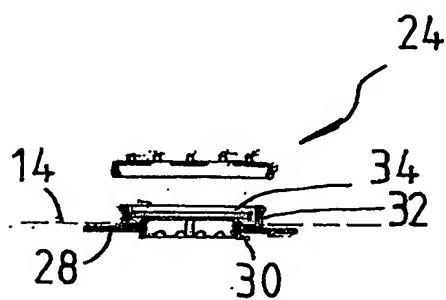


FIG. 6

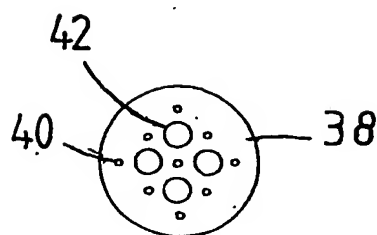


FIG. 7

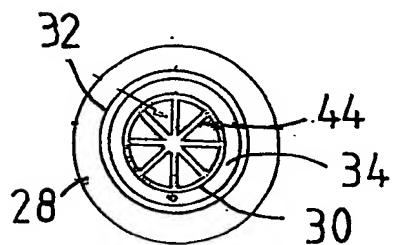


FIG. 8

3/5

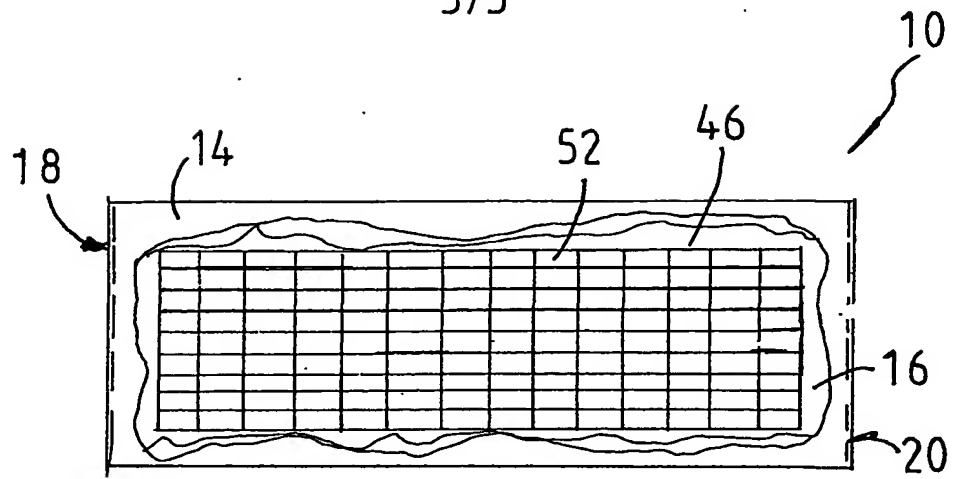


FIG. 10

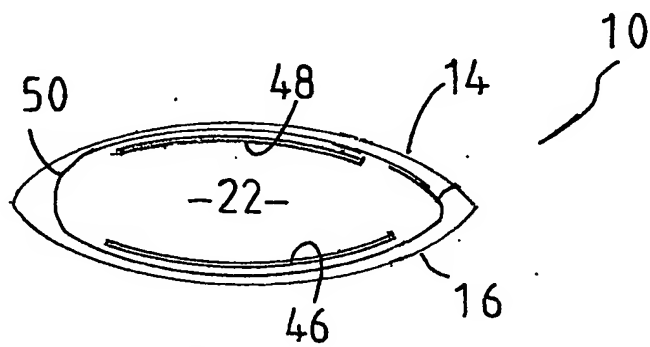


FIG. 11

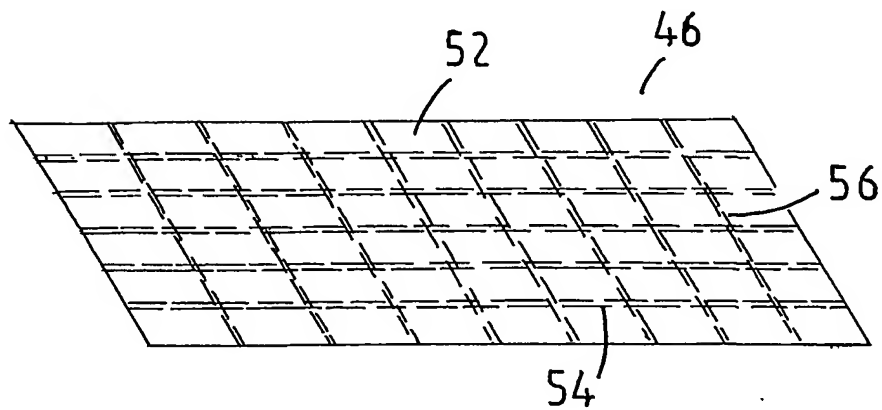


FIG. 12

4/5

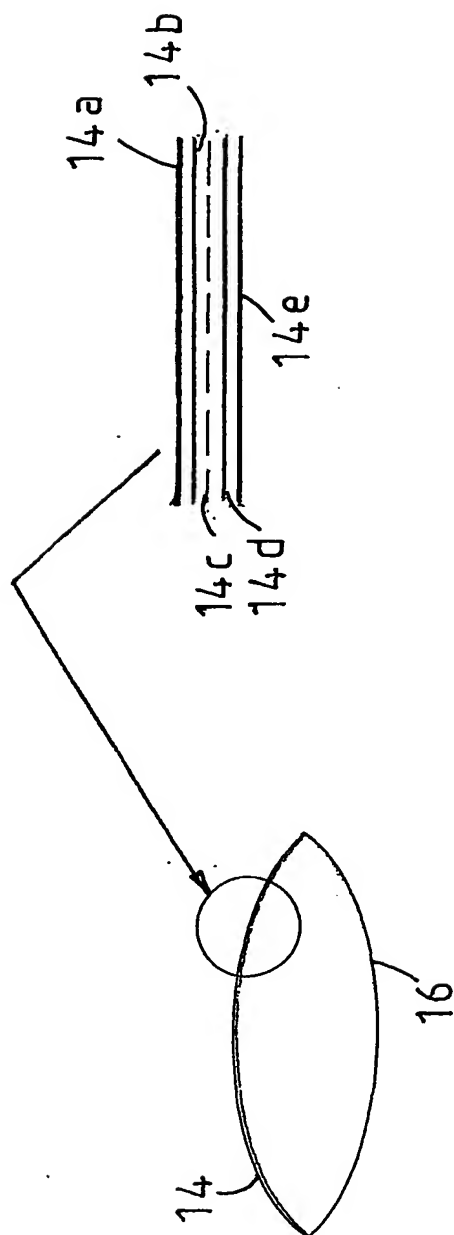


FIG. 13

5/5

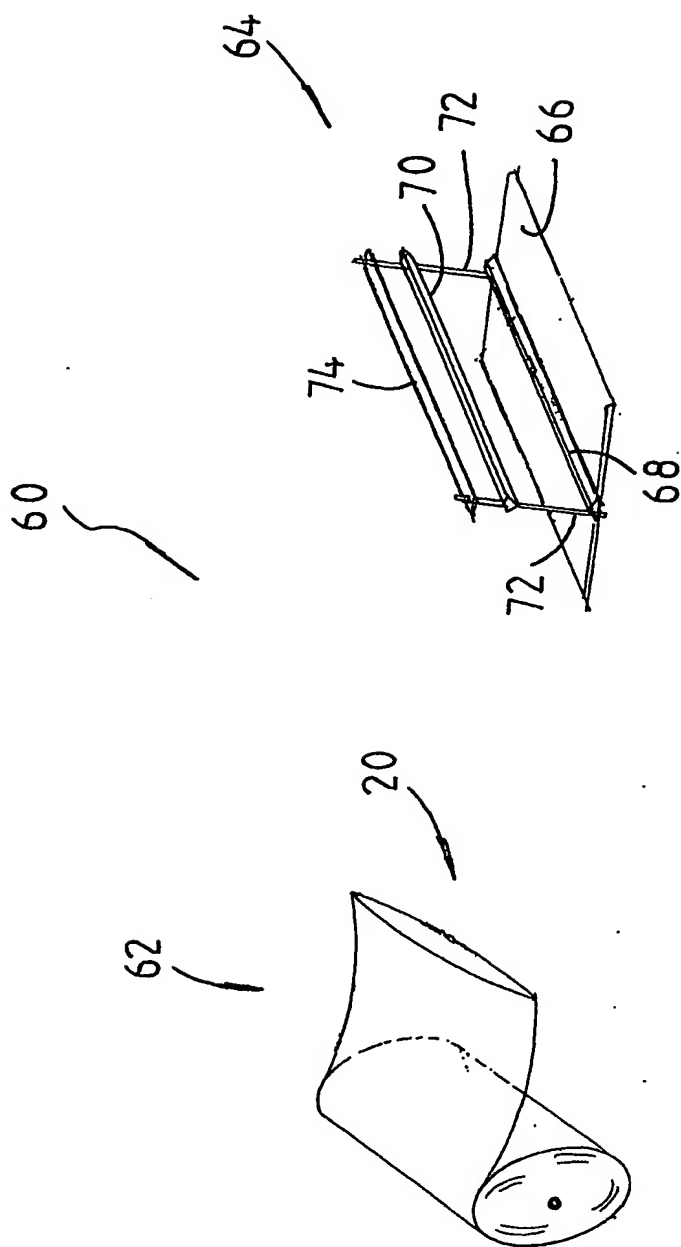


FIG. 14

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU02/00291

**A. CLASSIFICATION OF SUBJECT MATTER**Int. Cl. <sup>7</sup>: A61G 1/00, 17/00 B65D 30/00, 33/00

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

REFER TO ELECTRONIC SEARCH BELOW

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

DWPI + keywords: body bodies remains corpse bag pouch sack flexible pliant plastic seal hermet- clos- and similar words

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FR 2717678 A (BLANIE) 29 September 1995 Pages 2-4	1,10
X	US 5715583 A (SANDOVAL) 10 February 1998 Whole document	1, 4, 5, 8-10, 12-14
X	US 5659933 A (McWILLIAMS) 26 August 1997 Columns 4-8	1, 4-10, 12-14

☐ Further documents are listed in the continuation of Box C
 ☒ See patent family annex

## \* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "B" earlier application or patent but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

Date of the actual completion of the international search

19 April 2002

Date of mailing of the international search report 2 MAY 2002

Name and mailing address of the ISA/AU

AUSTRALIAN PATENT OFFICE  
PO BOX 200, WODEN ACT 2606, AUSTRALIA  
E-mail address: pct@ipaustrialia.gov.au  
Facsimile No. (02) 6285 3929

Authorized officer

Sue Thomas

Telephone No : (02) 6283 2454

INTERNATIONAL SEARCH REPORT  
Information on patent family members

International application No.  
PCT/AU02/00291

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member			
FR	2717678	NIL			
US	5715583	NIL			
US	5659933	AU	24244/97	CA	2250718
		WO	9736567	EP	921781
					END OF ANNEX